## **NIST Special Publication 800-53**

**Recommended Security Controls for Federal Information Systems** 

**A Status Report** 

Ron Ross

Computer Security Division
Information Technology Laboratory

## A Brief Review

#### Question

How does security control selection fit into an agency's information security program?

## A Brief Review

#### Answer

Security control selection is an important activity that supports a risk management process and is an integral part of an agency's overall information security program

# Managing Agency Risk

- Key activities in managing agency-level risk—risk resulting from the operation of an information system:
  - **✓ Categorize** the information system
  - ✓ Select set of minimum (baseline) security controls
  - ✓ Refine the security control set based on risk assessment
  - ✓ **Document** security controls in system security plan
  - ✓ **Implement** the security controls in the information system
  - ✓ **Assess** the security controls
  - ✓ **Determine** agency-level risk and risk acceptability
  - **✓ Authorize** information system operation
  - ✓ **Monitor** security controls on a continuous basis

# Risk Management Framework

SP 800-53 / FIPS 200



#### Security Control Selection

Selects minimum security controls (i.e., safeguards and countermeasures) planned or in place to protect the information system

SP 800-53 / FIPS 200 / SP 800-30



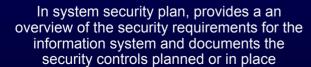
#### Security Control Refinement

Uses risk assessment to adjust minimum control set based on local conditions, required threat coverage, and specific agency requirements

**SP 800-18** 



#### Security Control Documentation



FIPS 199 / SP 800-60

## Security Categorization

Defines category of information system according to potential impact of loss



**SP 800-70** 

## **Security Control Implementation**

Implements security controls in new or legacy information systems; implements security configuration checklists

SP 800-37



## Security Control Monitoring



Continuously tracks changes to the information system that may affect security controls and assesses control effectiveness

SP 800-37

#### System Authorization



Determines risk to agency operations, agency assets, or individuals and, if acceptable, authorizes information system processing

SP 800-53A / SP 800-37

### Security Control Assessment



Determines extent to which the security controls are implemented correctly, operating as intended, and producing desired outcome with respect to meeting security requirements

# Strategy for Revising Special Publication 800-53

# Key Development Concepts

- There will be a clear and distinct separation of security control developer/implementer requirements and security control assessor requirements
- There will be three security control types defined within the master catalog of controls including:
  - Documentation-based controls
  - Activity-based controls
  - Mechanism-based controls

# Key Development Concepts

- Security controls will be defined at the token requirement level, (i.e., a single requirement per control)
- Enhanced and strong versions of security controls will be developed on an as needed basis
- There will be one group of assessment methods and associated assessment procedures for each security control in the master catalog of controls

## Revised Document Structure

#### Introduction

• The context for the importance of security controls—relating to key legislative and policy drivers

#### The Fundamentals

 The structure and types of security controls, organization of the master control catalog, methods to instantiate control variables

#### The Process

The process of selecting a baseline set of security controls using FIPS Publication 199 and its relationship to the organization's risk management process

#### Appendices

 Low, moderate, and high security control baselines, master control catalog, other supporting information

# New Security Control Structure

- Simplified structure consisting of:
  - Token-level security control statement
  - Supplemental guidance

#### Example:

FAMILY: CONTINGENCY PLANNING AND OPERATIONS (CP)

Contingency Planning

- **CP-1 CONTINGENCY PLAN DEVELOPMENT**
- **CP-1.b** <u>Basic Control</u>: The organization develops a contingency plan for the information system consistent with the intent of NIST Special Publication 800-34, addressing as a minimum, identification and notification of key personnel, plan activation, system recovery, and system reconstitution.

<u>Supplemental Guidance</u>: The level of detail provided in the contingency plan should be commensurate with the security category of the information system in accordance with FIPS Publication 199.

# Development Phases

- Develop basic security controls for master catalog
- Develop build criteria for enhanced and strong security controls
- Develop enhanced and strong security controls (where needed) for the master catalog
- Establish baselines (minimum security controls) for low, moderate, and high impact systems

# Projected Publication Schedule

- Special Publication 800-53
   Second Public Draft, August 2004
- Special Publication 800-53
   Third Public Draft, January 2005
- Special Publication 800-53
   Final Publication, March 2005

Note: Special Publication 800-53 will transition into FIPS 200 not later than December 2005. Several publication options under consideration.

# FISMA Implementation Project

#### Standards and Guidelines

- FIPS Publication 199 (Security Categorization)
- NIST Special Publication 800-37 (Certification & Accreditation)
- NIST Special Publication 800-53 (Recommended Security Controls)
- NIST Special Publication 800-53A (Assessment Methods/Procedures)
- NIST Special Publication 800-59 (National Security Systems)
- NIST Special Publication 800-60 (Security Category Mapping)
- FIPS Publication 200 (Minimum Security Controls)

Publication Completed

Publication in Development

## Contact Information

100 Bureau Drive Mailstop 8930 Gaithersburg, MD USA 20899-8930

#### **Project Manager**

Dr. Ron Ross (301) 975-5390 ron.ross@nist.gov

#### **Administrative Support**

Peggy Himes (301) 975-2489 peggy.himes@nist.gov

#### Senior Information Security Researchers and Technical Support

Marianne Swanson (301) 975-3293 marianne.swanson@nist.gov

Dr. Stu Katzke (301) 975-4768 skatzke@nist.gov

Pat Toth (301) 975-5140 patricia.toth@nist.gov

Curt Barker (301) 975-4768 wbarker@nist.gov Annabelle Lee (301) 975-2941 annabelle.lee@nist.gov

Gary Stoneburner (301) 975-5394 gary.stoneburner@nist.gov

Arnold Johnson (301) 975-3247 arnold.johnson@nist.gov

Information and Feedback
Web: csrc.nist.gov/sec-cert
Comments: sec-cert@nist.gov